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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,150	10/22/2003	Huan-sheng Hwang	9314-49	6598
54414	7590	11/30/2006	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC, P.A. P.O. BOX 37428 RALEIGH, NC 27627			A, MINH D	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,150

Applicant(s)

HWANG ET AL.

Examiner

Minh D. A

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/22/06.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 19-31 and 39-43 is/are rejected.
- 7) ☒ Claim(s) 14-18 and 32-38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-4, 5,7, 9-11, 12, 19, 39-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Zafar et al (US 2004/0263403).

Regarding claims 1, 19 and 39, Zafa discloses in figures 3-4D, mobile satellite radio antenna comprising a ground plane (108); a conductor loop (100a) overlying the ground plane (108); and wherein the monopole (110) and the conductor loop (100a) are configured to be coupled to a common feed-point (112). Col.3, lines [0024] to col.4, lines [0028].

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Regarding claims 2-3 and 40, Zafa discloses in figures 4A-4E, the conductor loop (100a-110e) has a reflective feature therein and the reflective feature comprises a corner. See figures 1-3

Regarding claims 4, 10-11 and 41, Zafa discloses in figures 4A-4d, the conductor loop (100a-100d) is rectangular or the monopole is substantially parallel to the conductor loop or the common feed-point (112) comprises a pad on the printed circuit substrate (102).

Regarding claim 5, Zafa discloses the conductor loop is substantially parallel to the ground plane. See figures 4A-4E.

Regarding claim 7, Zafa discloses the monopole (110) is coupled to the conductor loop at a corner thereof. See figure 4C.

Regarding claim 9, Zafa discloses wherein the conductor loop (100a-100d) is positioned adjacent an edge of the ground plane(108), and wherein the monopole(110) extends off the edge of the ground plane (108). See figures 4A-4D.

Regarding claim 12, Zafa discloses a helical element (110) arranged coaxial with the monopole and configured to be coupled to the common feed-point (3). See figures 4A-4D.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

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subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Zafa (US 2004/0263403).

Regarding claims 8 and 13, Zafa discloses the claimed invention except for a frequency range from about 1.5 GHz to about 2.5 GHz. However, this difference is not of patentable merit, since arrange from difference frequency is operated in the same manner, provide a high frequency for mobile or cellular phone. Therefore, to employ a frequency range from about 1.5 GHz to about 2.5 GHz of antenna of Zafa, upon a particular application or frequency of use, would have been deemed obvious to a person skilled in the art.

6. Claim 20-26, 31, 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Zafa (US 2004/0263403) in view of Mikkola et al (US 6,985,108).

Regarding claim 20, Zafa discloses a conductive ground plane, a conductor loop overlying the ground plane; and a monopole extending off the ground plane, wherein the monopole and the conductor loop are configured to be commonly coupled to the radio communications circuit at a common feed-point, Zafa unclearly discloses that, a frame; a radio communications circuit supported by the frame.

Mikkola discloses a radio communication and frame. See figures 3 and 10.

It would have been an obvious to one of ordinary skill in the art at the time the invention was made to employ a radio communication circuit supported by frame such as that suggested by Mikkola in the half loop antenna of Schultze to support the radio

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communication circuit for antenna, since it obtains a optimal operation for an antenna and improving the reliability of the antenna.

Regarding claims 21-22, Zafa and Mikkola discloses the conductor loop (1) has a reflective feature therein and the reflective feature comprises a corner. See figures 1-3

Regarding claims 23-26, Zafa and Mikkola disclose the claimed invention but does not explicitly disclose that, the conductor loop is rectangular or the monopole is substantially parallel to the conductor loop or the common feed-point (3) comprises a pad on the printed circuit substrate. However, these difference are not of patentable merit since the conductor loop is rectangular or the monopole is substantially parallel to the conductor loop or the common feed-point comprises a pad on the printed circuit substrate provide a different sharp and different direction for transmitting and receiving signal for antenna. Therefore, to employ the conductor loop is rectangular or the monopole is substantially parallel to the conductor loop or the common feed-point comprises a pad on the printed circuit substrate provide a different sharp and different direction for transmitting and receiving signal from half loop antenna of Zafa, upon a particular application or different way of use, would have been deemed obvious to a person skilled in the art.

Regarding claims 31 and 42-43, Zafa and Mikkola disclose the claimed invention except for a frequency range from about 1.5 GHz to about 2.5 GHz. However, this difference is not of patentable merit, since a rang from difference frequency is operated in the same manner, provide a high frequency for mobile or cellular phone. Therefore, to employ a frequency range from about 1.5 GHz to about 2.5 GHz of antenna of Zafa and

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Mikkola, upon a particular application or frequency of use, would have been deemed obvious to a person skilled in the art.

Allowable Subject Matter

7. Claims 14-18, 32-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art does not teach that, the monopole comprises a retractable monopole configured to extend and retract through the helical element and configured to connect to the common feed-point in an extended position recited in dependent claims 14 and 35.

Prior art does not teach that, the ground plane comprises a rectangular ground plane; wherein the conductor loop comprises a rectangular conductor loop having a side substantially aligned with a shorter side of the rectangular ground plane; wherein the monopole comprises a substantially linear conductor that extends substantially perpendicular to the edge of the ground plane from a coupling point at a corner of the rectangular conductor loop at the edge of the ground plane recited in dependent claim 16 and 32.

Citation of relevant prior art

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Woo (US 6,317,086) and Bowers et al (US 5,914,692) are cited to show a multiple loop antenna.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dieu A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 AM-2:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Examiner

Minh A

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11/17/06

shih-chao chen
SHIH-CHAO CHEN
PRIMARY EXAMINER